UNITED STATES NAVAL OBSERVATORY

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POSITIONS, AREAS, AND COUNTS OF SUNSPOTS DECEMBER 1950

By Lucy T. Day

These results are based upon measurements made at the Naval Observatory on plates secured either there or at the Mt. Wilson Observatory. The symbols used for the entries in the successive columns are as follows:

U.T., the epoch of observation in Universal Time.
No., the identifying number of the group assigned by Mt. Wilson.
Δl, the heliographic difference in longitude from the central meridian, measured positive to the west.
φ, the heliographic latitude, measured positive to the north.
ρ, the heliocentric angular distance from the line joining the centers of the Earth and Sun.
A, the true area of the umbra plus penumbra, expressed in millionths of the visible hemisphere.
s, the number of spots.

An asterisk means that no Mt. Wilson number was assigned. Plates secured at the Naval Observatory are indicated by N, and those at Mt. Wilson by W. The plate quality, which follows, is indicated by:

1, Poor; 2, Fair; 3, Good; 4, Very Good; 5, Excellent.

The following five quantities are listed successively at the end of each day, and give for that day:

1. The total number of groups, g.
2. The longitude of the central meridian, L_0.
3. The latitude of the center of the disc, B_0.
4. The total value of A.
5. The total value of s.

The mean daily area and the mean relative sunspot number, $r=10g+s$ are given at the end of the month.

These results are a continuation of those published in the *Monthly Weather Review* from February 1, 1927 to December 31, 1947.

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U.T.	No.	Δl	φ	ρ	A	s
		°	°	°		
1.645	10545	−80	−15	80	145	1
N−3	10542	−22	+12	23	388	1
	10543	− 9	−25	26	97	2
	10543	− 8	−22	24	24	6
	10543	− 1	−22	23	61	2
	10540	+ 5	−16	17	97	4
	10540	+10	−17	21	24	6
	10540	+17	−17	25	97	1
	10541	+13	− 6	15	25	7
	10541	+14	− 7	16	73	1
	10541	+21	− 4	22	48	2
	10544	+23	− 7	24	73	1
	10544	+25	− 8	26	12	1
	10544	+28	− 8	30	73	1
	10544	+29	− 6	30	48	4
	10539	+43	+19	45	24	1
	(7)	(107)	(+1)		1308	41
2.656	10545	−66	−15	67	121	1
N−3	10542	− 9	+12	14	339	2
	10543	+ 3	−24	25	73	4
	10543	+ 4	−22	23	12	1
	10543	+11	−22	26	48	2
	10540	+19	−16	25	73	1
	10540	+21	−17	28	12	2
	10540	+30	−17	34	73	4
	10541	+27	− 6	28	36	3
	10541	+27	− 8	29	48	2
	10544	+37	− 7	38	230	7
	10544	+41	− 9	42	73	4
	10544	+43	− 6	43	121	2
	10539	+57	+19	58	24	1
	(7)	(93)	(+1)		1283	36
3.760	10547	−80	−12	80	291	1
N−3	10545	−51	−15	53	97	1
	10542	+ 5	+13	13	97	4
	10542	+ 7	+12	14	242	1
	10543	+17	−23	30	24	2
	10543	+25	−22	34	24	3
	10540	+33	−15	36	48	1
	10540	+44	−15	45	121	2
	(*)	+42	+ 3	42	12	2
	10541	+42	− 7	43	24	5
	10544	+52	− 7	53	242	6
	10544	+53	− 9	54	61	12
	10544	+58	− 5	58	48	2
	10544	+59	− 7	59	12	1
	10544	+59	− 5	59	194	1
	(8)	(79)	(+1)		1537	44
4.746	10547	−69	−13	69	61	8
W−3	10547	−67	−12	67	242	1
	10545	−36	−15	38	85	1
	10542	+17	+12	21	24	4
	10542	+19	+12	22	218	2
	10546	+25	− 6	26	24	3
	10543	+39	−22	43	16	1
	10540	+47	−16	49	36	1
	10540	+58	−16	60	61	1
	10544	+66	− 6	66	242	1
	10544	+66	− 9	67	24	4
	10544	+74	− 7	74	48	1
	10544	+75	− 6	75	97	5
	(7)	(66)	(0)		1178	33
5.717	10548	−62	−14	63	48	7
W−2	10547	−57	−13	58	48	5
	10547	−55	−12	56	242	1
	10545	−24	−15	28	73	1
	10542	+32	+13	34	73	5
	10542	+34	+12	35	121	1
	10543	+51	−22	54	16	1
	10540	+60	−16	62	36	1
	10540	+70	−16	70	73	1
	10544	+78	− 6	78	145	5
	10544	+86	− 6	86	24	1
	(7)	(53)	(0)		899	29
6.629	10549	−86	+13	86	194	1
N−3	10548	−51	−12	52	24	4
	10548	−48	−14	50	194	3
	10548	−47	−15	50	48	3
	10547	−44	−12	45	24	2
	10547	−40	−11	42	242	1
	10545	−14	−15	20	61	1
	10542	+42	+12	43	12	1
	10542	+44	+11	45	170	3
	(5)	(41)	(0)		969	19
7.738	10551	−85	+17	85	194	1
W−2	10551	−75	+15	75	436	4
	10551	−74	+16	74	12	1
	10549	−70	+13	70	194	1
	10549	−70	+16	71	73	1
	10548	−37	−15	41	73	11
	10548	−33	−16	35	121	15
	10547	−30	−14	33	16	1
	10547	−28	−12	31	242	1
	10547	−28	−10	30	24	1
	10550	−30	+21	36	61	3
	10550	−25	+20	32	48	2
	10545	− 5	−13	14	12	1
	10545	− 3	−14	14	24	8
	10545	+ 1	−15	15	61	1
	10542	+58	+12	59	12	1
	10542	+59	+11	60	48	1
	10542	+60	+10	61	194	1
	(7)	(26)	(0)		1845	55
8.799	10551	−68	+17	69	145	1
N−2	10551	−61	+13	63	436	6
	10549	−55	+12	57	194	1

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U.T.	No.	Δl	φ	ρ	A	s
		°	°	°		
	10549	−54	+14	55	61	1
	10548	−20	−12	23	48	1
	10548	−20	−15	24	145	5
	10547	−11	− 9	15	24	6
	10547	−12	−11	16	12	2
	10547	−11	−12	17	218	1
	10550	−19	+22	28	194	3
	10550	−15	+22	27	73	2
	10550	−11	+20	23	194	4
	10545	+10	−12	15	61	3
	10545	+15	−15	21	48	1
	10542	+71	+12	12	194	1
	(7)	(12)	(0)		2047	38
9.636	10551	−56	+14	58	97	8
N−2	10551	−55	+16	56	145	2
	10551	−50	+15	52	364	6
	10551	−48	+16	50	24	4
	10549	−45	+15	47	24	7
	10549	−44	+12	45	170	2
	10549	−43	+15	45	73	5
	10549	−41	+15	43	157	2
	10550	− 9	+21	23	145	6
	10550	− 5	+21	22	48	5
	10550	+ 1	+20	20	218	5
	10548	− 8	−16	18	48	10
	10548	− 5	−17	18	36	3
	10548	− 5	−12	13	24	3
	10547	0	−11	11	242	1
	10545	+22	−12	24	48	2
	10545	+26	−16	30	48	1
	10545	+28	+12	31	24	1
	10552	+31	+11	33	73	2
	(7)	(1)	(0)		2008	75
10.639	10551	−42	+14	43	97	22
W−4	10551	−40	+15	42	109	5
	10551	−38	+14	41	97	15
	10551	−35	+15	37	121	19
	10549	−31	+12	33	97	1
	10549	−30	+13	33	61	23
	10549	−28	+14	32	121	10
	10550	− 5	+20	21	194	12
	10550	− 8	+18	21	48	19
	10550	+15	+19	25	218	1
	10548	+ 6	−16	17	24	4
	10548	+ 8	−18	21	12	2
	10548	+12	−14	18	6	2
	10547	+14	−13	19	206	1
	10545	+41	−16	43	12	3
	10552	+43	+13	45	73	9
	10552	+48	+11	50	61	1
	(7)	(348)	(0)		1557	149
11.642	10553	−50	+14	52	6	2
N−2	10551	−29	+15	33	16	5
	10551	−27	+17	32	194	12
	10551	−22	+16	28	32	5
	10551	−20	+16	25	97	8
	10549	−20	+13	24	24	3
	10549	−18	+12	22	218	15
	10549	−16	+15	23	48	11
	10549	−13	+14	18	194	13
	10550	+20	+21	28	170	8
	10550	+26	+18	32	48	1
	10550	+29	+20	34	242	1
	10547	+27	−13	30	242	1
	10552	+56	+13	57	121	6
	10552	+61	+11	62	73	1
	(6)	(335)	(0)		1725	92
12.636	10551	−13	+16	21	194	4
N−2	10551	− 9	+15	18	48	1
	10551	− 5	+15	17	97	9
	10549	− 4	+11	13	145	4
	10549	− 4	+15	17	48	6
	10549	+ 1	+13	14	73	7
	10549	+ 3	+15	16	61	1
	10550	+31	+22	38	48	1
	10550	+36	+20	41	121	7
	10550	+29	+18	34	61	2
	10550	+41	+20	46	291	1
	10547	+40	−13	42	218	1
	10552	+68	+13	70	48	4
	10552	+70	+12	71	97	1
	(5)	(322)	(−1)		1550	49
13.642	10551	0	+16	17	145	5
N−3	10551	+ 5	+20	22	24	7
	10551	+ 5	+15	16	97	13
	10549	+10	+14	18	145	15
	10549	+11	+12	16	61	6
	10549	+17	+15	24	61	1
	10550	+45	+22	50	48	1
	10550	+50	+20	53	121	8
	10550	+52	+18	55	73	1
	10550	+53	+19	56	242	1
	10547	+54	−13	55	206	1
	(4)	(309)	(−1)		1223	59
14.666	10551	+12	+17	22	170	2
N−1	10551	+20	+15	25	145	6
	10549	+29	+15	32	97	2
	10550	+57	+22	60	48	2
	10550	+60	+21	62	48	1
	10550	+65	+19	67	388	5
	10547	+68	−13	68	194	1
	(4)	(295)	(−1)		1090	19
15.978	10555	+ 7	−23	23	6	3
W−2	10551	+27	+14	31	12	4
	10551	+30	+17	35	61	2
	10551	+34	+16	37	24	4

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U.T.	No.	Δl	φ	ρ	A	s
		°	°	°		
	10549	+47	+15	50	61	1
	(3)	(278)	(−1)		164	14
16.655	10555	+21	−22	28	12	2
W−3	10555	+24	−22	31	16	1
	10551	+40	+17	43	61	1
	10551	+42	+16	46	6	1
	10549	+58	+15	60	24	1
	(3)	(269)	(−1)		119	6
17.650	10555	+37	−22	42	12	1
W−3	10551	+54	+17	56	48	1
	10549	+71	+15	73	12	1
	(3)	(256)	(−1)		72	3
18.926	10551	+69	+17	71	48	1
	(1)	(239)	(−1)		48	1
19.656	10551	+79	+17	79	24	1
	(1)	(229)	(−1)		24	1
20.652	10556	−67	− 6	67	12	1
W−2	10557	+73	+13	74	24	1
	(1)	(216)	(−2)		36	2
21.648	(*)	−63	− 6	63	12	2
	(1)	(203)	(−2)		12	2
22.653	(*)	−37	+ 7	39	6	3
	(1)	(190)	(−2)		6	3
23.663	10558	−55	+11	57	16	5
	(1)	(177)	(−2)		16	5
24.663	10560	−57	− 8	57	12	1
W−3	10559	−55	− 9	55	6	3
	10559	−51	− 8	51	24	2
	10558	−42	+10	43	48	4
	10558	−39	+11	41	24	6
	10558	−37	+12	40	24	1
	(3)	(163)	(−2)		138	17

U.T.	No.	Δl	φ	ρ	A	s
		°	°	°		
25.649	1056	−45	−11	46	6	1
N−2	1056(	−43	− 8	43	12	8
	10559	−38	− 8	38	12	2
	10559	−37	− 8	38	16	1
	1055ε	−29	+10	32	73	15
	10558	−27	+11	31	97	16
	10558	−24	+12	27	61	1
	(3)	(150)	(−2)		277	44
26.643	10559	−24	− 8	26	36	1
N−2	10559	−22	− 8	23	61	1
	10558	−16	+12	21	218	2
	10558	−15	+ 9	19	48	2
	10558	−11	+12	17	242	4
	(2)	(137)	(−2)		605	10
27.629	10559	− 8	− 6	10	61	5
N−3	10558	− 3	+12	14	242	5
	10558	− 1	+ 9	11	61	2
	10558	− 1	+11	13	73	4
	10558	+ 3	+12	15	255	5
	10561	+17	− 7	18	6	2
	(3)	(124)	(−2)		698	23
28.703	10558	+12	+11	19	242	16
W−2	10558	+18	+12	24	194	7
	(1)	(110)	(−3)		436	23
29.720	10558	+25	+11	29	97	2
W−2	10558	+27	+11	31	73	9
	10558	+32	+11	34	145	4
	(1)	(97)	(−3)		315	15
30.708	10558	+38	+11	41	97	1
N−3	10558	+41	+11	42	61	6
	10558	+46	+12	48	145	2
	(1)	(84)	(−3)		303	9
31.631	10558	+50	+10	52	73	1
N−2	10558	+56	+11	57	73	1
	(1)	(72)	(−3)		146	2

Mean for 31 days, $A=762$, $r=68.0$

NAVY-DPPO PRNC. WASH., D.C.